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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,073	01/16/2004	Jong Cheol Choi	1630-0503PUS1	5287

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EXAMINER	
SELLERS, DANIEL R	

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
03/08/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/758,073	CHOI, JONG CHEOL	
	Examiner	Art Unit	
	DANIEL R. SELLERS	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-8,10-12,16-19,21 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-8,10-12,16-19,21 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 5-8, 10-12, 16-19, 21, and 22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 1, 5-8, 10-12, 16-19, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Replay Gain (previously cited and hereinafter RG) in view of Takahiro, JP 02-089252 (previously cited), Kincaid, US 7,072,477 B1 (previously cited as pertinent, not cited), and MP3 CD Maker (previously cited).

4. Regarding **claim 1**, RG teaches a method for controlling an audio recording level, comprising the steps of:

a) recording entry audio data in song units and simultaneously decoding the audio data, and detecting an audio level average of the decoded data in song units (see RG's Calculation page, "2. RMS Energy Calculation", (http://web.archive.org/web/20010827010748/privatewww.essex.ac.uk/~djmrob/replaygain/calculating_rg.html), archived on 08/27/2001, and hereinafter calculation page)*; and*

b) variably controlling an audio level of a song to be recorded later on the basis of the audio level average (see RG's Outline page, Basic Steps, #4, (http://web.archive.org/web/20010827022814/privatewww.essex.ac.uk/~djmrob/replaygain/outline.html), archived on 08/27/2001, and hereinafter outline page)*,*

wherein the step b) comprises:

calculating an offset value between the detected audio level average and an audio level average of a **reference file** (see RG's Calibration pages, pp. 1-2, specifically p.2, "Implementation", (http://web.archive.org/web/20020106152700/http://privatewww.essex.ac.uk/~djmrob/replaygain/calibration.html), archived on 01/06/2002, and hereinafter calibration page)*;*

adjusting an audio level of a subsequent song unit on the basis of the offset value (see calculation page, "4. Calibration with reference level")*; and*

encoding and **storing** *the subsequent song unit having the adjusted audio level* (see calculation page, "4. Calibration with reference level", wherein the difference is "store[d]... in the audio file")*, and*

wherein the step (a) determines the audio level average of the decoded data by excluding certain parts of the decoded data having an audio level outside of a prescribed range extending from a maximum audio reference level to a minimum audio reference level (see calculation page, "3. Statistical Processing")…

The introduction page, "Replay Gain - A Proposed Standard", (http://web.archive.org/web/20011005165428/privatewww.essex.ac.uk/~djmrob/replaygain/index.html) (archived on 10/05/2001 and hereinafter introduction page) links to the contents page by the "Read on to find out more" link, (http://web.archive.org/web/20011031173847/privatewww.essex.ac.uk/~djmrob/replaygain/contents.html) (archived on 10/31/2001 and hereinafter contents page). The calculation page is linked to "6. Calculating the replay gain" on the contents page, and the outline page is linked to "4. Outline of the Replay Gain Proposal" on the contents page. RG teaches calculating an offset value between the detected audio level average and an audio level average of a previously recorded file (RG's Calibration page, p. 2, "Implementation"). On the calibration page, RG teaches a pink noise audio file to create a reference audio level average, to which every subsequent song is compared (i.e. the replay gain is the difference between the average level of the pink noise file and the current song's detected audio level average). RG also teaches adjusting the audio level based on the offset value (see calculation page, "4. Calibration with reference level"). RG, on the calculation page, teaches determining the audio level average (RMS), wherein it excludes audio levels outside a prescribed range by virtue of choosing the

RMS value 5% down from the top of the sorted list. However, RG does not appear to teach

*"calculating an offset value between the detected audio level average and an audio level average of a **previously recorded song**;"*

Takahiro teaches an automatic volume adjusting device, wherein a current song is adjusted according to a peak volume of a previously recorded song (abstract). It is obvious to substitute the reference pink noise track with a previously recorded song, wherein RG provides source code to modify (see calibration page, p. 2, "Implementation", wherein "ref_pink.wav" can be replaced by the teachings of Takahiro). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of RG and Takahiro for the purpose of adjusting the volume to a user's preferred volume level, wherein the preferred volume level would be the level at which the user set the system during the first played song. However, the combination of RG and Takahiro does not appear to teach

"wherein the step (a) determines the audio level average of the decoded data by... and the audio level average of the decoded data is an average value of the decoded data having the prescribed range from the maximum audio reference level to the minimum audio reference level in the song."

Kincaid teaches a method for normalizing the perceived volume level in a digital sound file (see abstract). Specifically, Kincaid teaches the calculation of the average weighted power over the entire audio file (see column 4, line 18 - column 5, line 29). One of ordinary skill in the art at the time of the invention would have found it obvious to use an average power calculation wherein the average power over the entire file is used instead of a quick and imprecise RMS determination, such as the one taught in RG. One of ordinary skill in the art at the time of the invention would expect favorable results

and would be inclined to experiment with the teachings of Kincaid for the purpose of improving perceived volume level of different audio files. Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the teachings of RG, Takahiro, and Kincaid for the purpose of better perceived normalization. However the combination does not appear to teach:

*"encoding and **recording** the subsequent song unit having the adjusted audio level"*

MP3 CD Maker teaches a program for writing MP3 or WAV songs to a writable compact disc. Specifically, MP3 CD Maker teaches a method of making a CD with normalized volumes, so that the songs are perceived to be played at the same volume (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?"). MP3 CD maker does not disclose the method of normalizing, but it would have been obvious to substitute the method taught by RG shown above. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of RG, Takahiro, Kincaid, and MP3 CD Maker to provide the user with a better audio experience. It would have been obvious for one of ordinary skill in the art at the time of the invention that a better experience would be obtained by adjusting the volumes before writing to a compact disc, so that a user can use any prior art CD player and amplifier to hear the "normalized" audio.

5. Regarding **claim 5**, see the preceding argument with respect to claim 1, the combination teaches a method as set forth in claim 1, further comprising

simultaneously recording the audio data to a recording medium, and (c) recording the variably controlled audio level of the song to the recording medium (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?").

6. Regarding **claim 6**, see the preceding argument with respect to claim 5, the combination teaches a method as set forth in claim 5, wherein

the recording medium is one of the following:
an optical disk (see MP3 CD Maker FAQ, p. 2, "What makes "Normalizing" the volume levels so cool?"),
a HDD (hard disk driver),
a DRAM (dynamic random access memory), and
a flash memory.

The MP3 files are stored on a CD after adjusting the perceived volume.

7. Regarding **claim 7**, see the preceding argument with respect to claim 1. The combination teaches a method for controlling an audio recording level, comprising the steps of:

a) decoding entry audio data to be recorded in song units, and determining an audio, level average of the decoded entry audio data in song units (see calculation page and see RG 's File Format page, "Where to store them?", (http://web.archive.org/web/20010827020146/privatewww.essex.ac.uk/~djmrob/replaygain/file_format.html), archived on 08/27/2001, and hereinafter file format page)*; and*
b) variably controlling a level of subsequent decoded audio data on the basis of the determined audio level average (see RG 's Player Requirements page, "1. Scale audio to match Replay Gain", (http://web.archive.org/web/20010827024445/privatewww.essex.ac.uk/~djmrob/replaygain/player.html), archived on 08/27/2001, and hereinafter player requirements page),
wherein the step b) includes the steps of:
calculating an offset value between the detected audio level average and an audio level average of a previously recorded song (see Takahiro, abstract)*;*
adjusting an audio level of a subsequent song unit on the basis of the offset value (see RG's calculation page, "4. Calibration with reference level")*; and*
encoding and recording the subsequent song unit having the adjusted audio level (see RG's calculation page, "4. Calibration with reference level", wherein the difference is "store[d]... in the audio file", wherein MP3 CD maker makes obvious recording, see MP3 CD Maker FAQ, p. 2)*, and*
wherein the step (a) determines the audio level average of the decoded data by excluding certain parts of the decoded data having an audio level outside of a prescribed range extending from a maximum audio reference level to a minimum audio reference level. (see RG's calculation page, "3. Statistical Processing") *and the audio level average of the decoded data is an average value of the decoded data having the prescribed range from the maximum audio reference level to the minimum audio reference level in the song.* (see Kincaid, column 4, line 18 - column 5, line 29).

RG teaches decoding the audio data, wherein different file formats are proposed, such as MP3 and WAV formats (see calculation and file format pages). It is implicit that one of these formats is decoded to determine the audio level average. RG, on the calculation page, teaches determining the audio level average (RMS), wherein it excludes audio levels outside a prescribed range by virtue of choosing the RMS value 5% down from the top of the sorted list. The combination of RG, Takahiro, Kincaid, and MP3 CD Maker teaches the calculation between the detected audio level average (see above with respect to Kincaid) and an audio level average of a previous song (see above with respect to Takahiro), and the combination teaches recording the adjusted MP3 files onto a optical disk (see above with respect to MP3 CD Maker).

8. Regarding **claim 8**, see the preceding argument with respect to claim 7. The combination teaches a method as set forth in claim 7, wherein the previously recorded song is a firstly recorded song (see Takahiro, abstract).

9. Regarding **claim 10**, the further limitation of claim 7, see the preceding argument with respect to claims 6 and 7. The combination teaches these features.

10. Regarding **claim 11**, see the preceding argument with respect to claim 7. The combination teaches a method as set forth in claim 7, wherein

the decoded entry audio data is in a first audio format type, and the subsequent decoded audio data is in a second audio format type, the first and second audio format types different from each other (see introduction, wherein RG teaches a CD audio format and a subsequent MP3 audio format with metadata for title, artist, and CD track number).

11. Regarding **claim 12**, see the preceding argument with respect to claim 1. The combination teaches an apparatus with these features, wherein it teaches a method performed on a personal computer system.

12. Regarding **claim 16**, the further limitation of claim 12, see the preceding argument with respect to claim 5. The combination teaches these features.

13. Regarding **claim 17**, the further limitation of claim 16, see the preceding argument with respect to claim 6. The combination teaches these features.

14. Regarding **claim 18**, see the preceding argument with respect to claim 7. The combination teaches an apparatus with these features, wherein it teaches a method performed on a personal computer system.

15. Regarding **claim 19**, the further limitation of claim 18, see the preceding argument with respect to claim 8. The combination teaches these features.

16. Regarding **claim 21**, the further limitation of claim 18, see the preceding argument with respect to claim 6. The combination teaches these features.

17. Regarding **claim 22**, the further limitation of claim 18, see the preceding argument with respect to claim 11. The combination teaches these features.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Keller et al., US 6,621,768 B1 (previously cited) - teaches a compact disc recorder with normalization features (column 1, lines 24-43, column 4, lines 46-48, and column 24, lines 15-20);

Nakano et al., (previously cited) - teaches an automatic gain control device for adjusting input sound signals to proper values (Column 1, lines 9-17);

Rzeszewski, (previously cited) - calculates a power level and compares it to a threshold (abstract);

Dougherty, (previously cited) - teaches dynamic compression and automatic gain adjustment (Column 1, lines 16-22 and Column 10, line 64 - Column 11, line 6); and

Mayer, (previously cited) - teaches automatic volume normalization (¶ 0007).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL R. SELLERS whose telephone number is (571)272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel R. Sellers/
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